Sickle cell anaemia

What is sickle cell anaemia?

Sickle cell anaemia (also known as sickle cell disease) is a blood disorder affecting haemoglobin production. Haemoglobin is a protein in the blood that carries oxygen around our bodies.

Sickle cell anaemia is passed from parent to child in genes. Genes carry information about human characteristics such as eye colour, hair colour and haemoglobin.

Sickle cell anaemia is inherited.
Sickle cell anaemia is <u>not</u> contagious.
Sickle cell anaemia is <u>not</u> transmitted by germs.

Sometimes changes occur to genes, resulting in medical conditions. Such changes occur to beta (β) globin genes in sickle cell anaemia:

- A person normally inherits two β globin genes for the production of the beta globin protein in haemoglobin.
- A person may have the sickle alteration (mutation) in one of their two β globin genes. This person is called a **sickle cell carrier** and is **<u>healthy</u>**.
- Carriers may be at risk of having a child affected with sickle cell anaemia if their partner is also a sickle cell carrier.
- When a person has the sickle alteration (mutation) in **<u>one</u>** of their β globin genes, and they have a certain alteration in their other β globin gene they may have a condition called sickle cell anaemia.

Treatment

Those with sickle cell anaemia require regular medical management to correct the anaemia and to prevent and manage painful crises.

The health of sickle cell carriers

A carrier can expect to be **<u>healthy</u>** and should discuss their carrier state with their doctor.

Sickle cell anaemia and family planning

The genes for sickle cell anaemia are common in people of African, Middle Eastern, Southern European, Indian, Pakistani and Caribbean origin.

Couples planning a family, or early in pregnancy, should have a blood test to determine whether or not they are carriers, if the origin of either of their families is one of the areas listed above; or if they have a family history of any blood disorder or anaemia. This test is needed to determine if there is any risk of having a child affected by a genetic blood disorder.

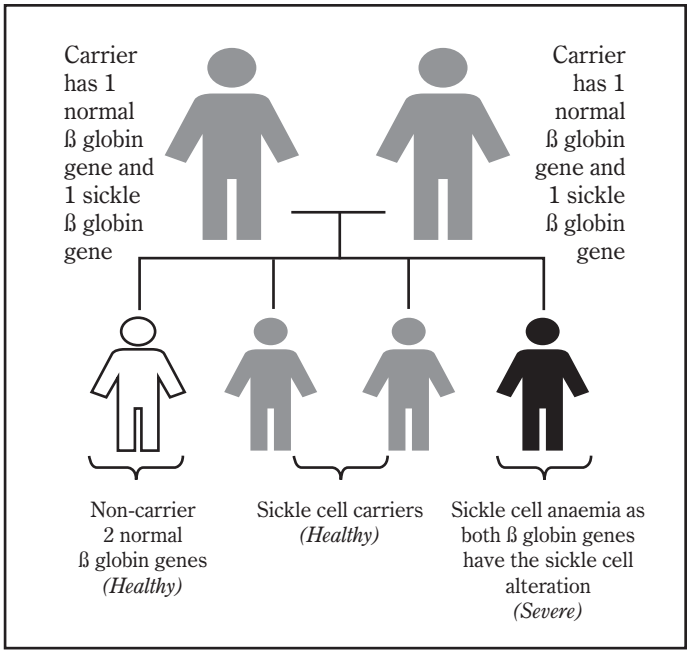
Those at risk of having an affected child have options. This condition can be diagnosed as early as the 12th week of pregnancy. Termination of pregnancy can then be considered, if appropriate. People can adopt or can consider assisted reproductive techniques (such as the use of donor eggs or donor sperm). Others may choose to take the chance of having an affected child. All of these options can be discussed with a Genetic Counsellor. Testing can be arranged by your local doctor or by contacting the hospitals listed at the end of this pamphlet.

Important information for your family

If you are a carrier of the HbS gene (sickle alteration) other members of your family may also be carriers and at risk of having children with a severe blood condition. It is recommended that other family members **<u>and</u>** their partners be tested for their carrier status **<u>prior</u>** to having children of their own.

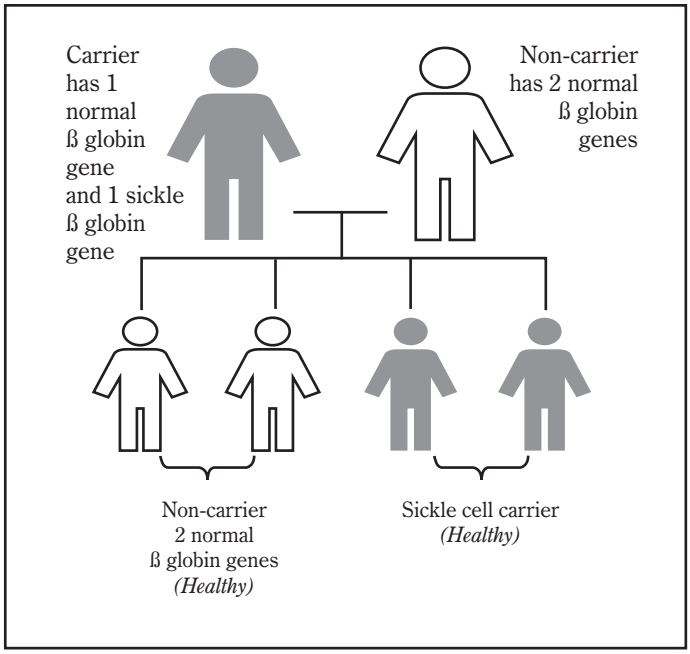
Chances of having a child affected by sickle cell anaemia

Figure 1:
Both parents are sickle cell carriers



With **each** pregnancy, this couple has a:
- 1 in 4 chance of having a child with 2 normal β globin genes.
- 2 in 4 chance of having a sickle cell carrier.
- 1 in 4 chance of sickle cell anaemia.

Figure 2:
Only one parent is a sickle cell carrier



With **each** pregnancy, this couple has a:
- 2 in 4 chance of having a child with 2 normal β globin genes.
- 2 in 4 chance of having a sickle cell carrier.

Useful contacts

Thalassaemia Society of NSW
PO Box M120 CAMPERDOWN NSW 2050
Level 7 King George V Building
Missenden Road
CAMPERDOWN NSW 2050
Phone: +61 2 9550 4844
Mobile: 0400 116 393
www.thalnsw.org.au

Children's Hospital at Westmead
Haematology Department
Cnr Hawkesbury Rd and Hainsworth St,
Westmead NSW 2145
Ph: +61 2 9845 0000

Sydney Children's Hospital
Department of Haematology
High Street, Randwick NSW 2031
Ph: +61 2 9382 1111

The Prince of Wales Hospital
Department of Haematology
High Street, Randwick NSW 2031
Ph: +61 2 9382 4982

Royal Prince Alfred Hospital
Department of Haematology
Level 5, Missenden Road
Camperdown NSW 2050
Ph: +61 2 9515 7013

Westmead Hospital
Department of Haematology
Cnr Hawkesbury Road & Darcy Roads
Westmead NSW 2145
Ph: +61 2 9845 5555

Liverpool Hospital
Department of Haematology
Ground Floor
Cnr Elizabeth & Goulburn Street
Liverpool NSW 2170
Ph: +61 2 9828 3000

Thalassaemia AUSTRALIA
Unifying support and genetics

Thalassaemia Australia Inc.
333 Waverley Road
Mount Waverley VIC
AUSTRALIA 3149

Phone: +61 3 9888 2211
Fax: +61 3 9888 2150
Email: info@thalassaemia.org.au
Website: www.thalassaemia.org.au

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